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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,121	04/25/2000	Christopher Peter LaRosa	CS10088 P01	9421

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Motorola Inc
Personal Communications Sector
Intellectual Property Department (PJB)
600 North US Highway 45 Rm AN475
Libertyville, IL 60048

EXAMINER

ELALLAM, AHMED

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 01/13/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/558,121

Applicant(s)

LAROSA ET AL.

Examiner

AHMED ELALLAM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-12 and 32-34 is/are allowed.
- 6) ☒ Claim(s) 1-8, 13, 14, 16-20, 23, 25-27 and 30 is/are rejected.
- 7) ☒ Claim(s) 15, 21, 22, 24, 28, 29 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5, 8, 10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1, 2, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hutchison, IV et al, US (5,790,589).

Regarding claims 1 and 2, Hutchison discloses a method/system for acquiring a pilot signal comprising:

A searcher controller that provides a PN offset to the PN generator 60, see column 6, lines 25-24. (Reads on selecting a pseudo-random noise (PN) offset for a PN sequence);

A plurality of accumulators 48, 50, responsive to signals from searcher controller 58 for resetting, latching and setting the summation period, in connection with squaring means 52 for squaring each of the sums and adds the squares together, the sum of the squares is provided by squaring means 52 to non-coherent combiner accumulator 54,

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the non-coherent accumulator 54 determines an energy value from the output of squaring means 52. Further, Hutchison discloses that accumulator 54 provides the energy signal to comparison means 56 which compares energy value to predetermined thresholds supplied by searcher controller 58, and the results of each of the comparisons is then fed back to searcher controller 58. Search controller 58 examines the comparisons and determines whether the window contains likely candidates for the correct offset, see column 6, lines 35-50. Hutchison also discloses that the iterative searching method is repeated with alternating advanced and retarded search windows until either the actual location of the pilot channel in the PN code sequence is detected or a predetermined number of iterations has occurred, see column 3, lines 54-63.

(Reads correlating at least a portion of the samples with at least a portion of the PN sequence to produce a correlation energy; choosing a new PN offset; comparing the correlation energy to an energy threshold; and repeating the steps of correlating, choosing, and comparing until any of: a PN sequence timing is found that produces the correlation energy at least equal to the energy threshold, or the step of comparing is performed a predetermined number of times).

It is inherent that the receiver of Hutchinson stores the received signals, because there presence is needed for the correlation to take place.

Regarding claims 13 and 14, Hutchison discloses a method/system for acquiring a pilot signal comprising:

A searcher controller that provides a PN offset to the PN generator 60, see column 6, lines 25-24. (Reads on selecting a pseudo-random noise (PN) offset for a PN sequence);

A plurality of accumulators 48, 50, responsive to signals from searcher controller 58 for resetting, latching and setting the summation period, in connection with squaring means 52 for squaring each of the sums and adds the squares together, the sum of the squares is provided by squaring means 52 to non-coherent combiner accumulator 54, the non-coherent accumulator 54 determines an energy value from the output of squaring means 52. Further, Hutchison discloses that accumulator 54 provides the energy signal to comparison means 56 which compares energy value to predetermined thresholds supplied by searcher controller 58, and the results of each of the comparisons is then fed back to searcher controller 58. Search controller 58 examines the comparisons and determines whether the window contains likely candidates for the correct offset, see column 6, lines 35-50.

It is inherent that the receiver of Hutchinson stores the received signals, because there presence is needed for the correlation to take place.

2. Claims 18, 19, 23, 25, 26, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Storm et al, US (6,144,649).

Regarding claims 18 and 19, with reference to figures 1 and 2, Storm discloses a method/system for acquiring a pilot signal comprising:

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A sample buffer 202 for storing samples of a received signal, see column 6, lines 14-19,

A correlator 204 coupled to the sample buffer for correlating sample buffer using PN offsets and producing a correlation energy, see column 6, lines 59-67 and column 7, lines 1-16;

A logic 254 (claimed controller) coupled to the correlator and compares the correlation result to a predetermined threshold, see column 7, lines 17-24. (Reads on a controller coupled to the correlator and operable to interrupt the correlator when the PN sequence at a particular PN offset produces a correlation energy at least equal to an energy threshold).

Regarding claims 25 and 26, with reference to figures 1 and 2, Storm discloses a CDMA cellular system comprising:

A base station 102 for transmitting a pilot signal having a particular time alignment;

A cellular telephone 104 operable to receive representations of pilot signal, the cellular telephone comprising:

A sample buffer 202 for storing samples of a received signal, see column 6, lines 14-19,

A correlator 204 coupled to the sample buffer for correlating sample buffer using PN offsets and producing a correlation energy, see column 6, lines 59-67 and column 7, lines 1-16;

A logic 254 (claimed controller) coupled to the correlator and compares the correlation result to a predetermined threshold, see column 7, lines 17-24. (Reads on a controller coupled to the correlator and operable to interrupt the correlator when the PN sequence at a particular PN offset produces a correlation energy at least equal to an energy threshold).

Regarding claims 23 and 30, with reference to figure 2, Storm discloses a PN generator 205 coupled to the sample buffer and to the correlator 224 to generate the PN sequence at each of plurality of PN offsets. See column 5, lines 29-37 and column 6, lines 51-58.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-8, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchison.

Regarding claim 3, with reference to figure 4, Hutchison discloses a PN sequence generator 60 that generates PN sequence with a PN offset during the correlation process, see column 3, lines 44-63.

Hutchison does not explicitly disclose generating, during the step of storing, the PN sequence.

However, it would have been obvious to a person of skill in the art, at the time the invention was made to generate a PN sequence when receiving a signal so that correlation can be started immediately after despreading the received signal.

Regarding claims 4 and 16, Hutchison does not disclose generating a local PN sequence with faster rate than the rate of the PN sequence received.

Examiner takes official notice, that local PN generation of higher rates than the rate of the received signal is well known in the art. Since official notice is taken, it would have been obvious to a person of skill in the art at the time the invention was made to have local PN generation of PN sequence of Hutchison faster than the rate of received PN sequence so that correlation determination can be faster.

Regarding claim 5, it is inherent to Hutchison that a position of PN sequence must be noted because that is needed as a reference for subsequent correlations determinations.

Regarding claim 6, Hutchison discloses that selecting PN offset is responsive to the PN position. See column 3, lines 37-67 and column 4, lines 1-23.

Regarding claim 7, Hutchison discloses that PN offsets are chosen with respect to PN offset previously selected. See column 3, lines 37-67 and column 4, lines 1-23.

Regarding claim 8, Hutchison discloses that new PN offset represent an incremented version of the PN offset previously selected. See column 3, lines 37-67 and column 4, lines 1-23.

Regarding claim 17, Hutchison discloses that after finding the phase of the spreading signal, frequency is found in using a demodulation element that has hardware

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for both phase and frequency tracking. See column 5, lines 47-53. (Reads on assigning, responsive to the step of choosing, the PN sequence timing to at least one demodulation branch of a receiver of the radiotelephone).

4. Claim 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Storm in view of Chen, US (5,881,058).

Regarding claims 20 and 27, Storm discloses all the limitations of respective parent claims 18 and 25, except it does not disclose a memory for storing a predetermined number of highest correlation energies and corresponding PN offsets.

However, Chen discloses in the same field of endeavor, with reference to figure 5, Chen discloses a buffer 422 for storing a predetermined number of highest correlation energies and corresponding PN offsets. See column 6, lines 62-67 and column 7, lines 1-22.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement the buffering mechanism of storing PN offset and corresponding correlation energies taught by Chen in Storm apparatus so that the correlator of Storm would have less processing to do by retrieving the values of correlation energies stored in advance.

Allowable Subject Matter

5. Claims 9-12, 32-34 allowed.

Claims 15, 21, 22, 24, 28, 29, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Levin et al, US (5,654,979; Yamaguchi et al, US (5,761,211; Sutton, US (5,805,648); Koo et al, US (5,956,367); Chung et al, US (6,005,889); Shockey, US (6,094,450); Burns, US (6,141,374); Kenney, US (6,144,691); Pfeil et al, US (6,191,738); Lin et al, US (6,331,998); Sourour et al, US (6,421,371); Tak et al, US (6,567,460); Kudhrethaya et al, US (6,606,349); Ramberg et al, US (6,628,699).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (703) 308-6069. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (703) 305-4744. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

AHMED ELALLAM
Examiner
Art Unit 2662

0107/04


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